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Dr. Raymond W. Waldo
Station Manager
San Onofre

December 31, 2002

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: **Docket No. 50-361**
Licensee Event Report No. 2002-006
San Onofre Nuclear Generating Station, Unit 2

Gentlemen:

This submittal provides a Licensee Event Report (LER) for an occurrence involving the actuation of the Reactor Protection System when Unit 2 experienced a loss of main feedwater to the steam generators.

Any actions listed are intended to ensure continued compliance with existing commitments as discussed in applicable licensing documents; this LER contains no new commitments. If you require any additional information, please so advise.

Sincerely,

Raymond Waldo

LER No. 2002-06

cc: E. W. Merschoff, Regional Administrator, NRC Region IV
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3

IE22

P.O. Box 128
San Clemente, CA 92672-0128
949-368-8725/PAX 88725
Fax 949-368-6183
waldorw@songs.sce com

NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
San Onofre Nuclear Generation Station (SONGS) Unit 2	05000-361	1 of 2

4. TITLE

Main Feedwater Controller fault causes loss of Main Feedwater and Reactor Trip on Low Steam Generator Level

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									None	
11	02	2002	2002	006	00	12	31	2002	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	1
10. POWER LEVEL	100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
20.2203(a)(1)	50.36(c)(1)(i)(A)	X 50.73(a)(2)(iv)(A)	73.71(a)(4)
20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER
20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	
20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)	
20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)	
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
R. W. Waldo, Station Manager, Nuclear Generation	949-368-8725

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	JB	LC	F180	N					

14. SUPPLEMENTAL REPORT EXPECTED		15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On 11/2/2002 at 0316 PST, with the Unit 2 reactor at 100% power, the Reactor Protection System (RPS) tripped the Unit. A main Feedwater (FW) controller failed; the FW regulating valve (2FV1111) began to close; and the water level in steam generator 89 decreased to the low-level trip set point. SCE made a 4 hour telephone notification to the NRC in accordance with 10 CFR 50.72(b) and is providing this follow-up report in accordance with 10 CFR 50.73(a)(2)(iv)(A).

SCE's cause evaluation is ongoing. However, preliminary investigations indicate that the 2FC1111 main FW controller card had a shorted low limit operational amplifier (Motorola, MLM301AG, date code 7432). This may be an age-related failure. This LER will be supplemented if this conclusion changes significantly. SCE replaced both Unit 2 main FW controller cards (2FC1111 and 2FC1121) with new cards (even though 2FC1121 tested satisfactorily). As a precautionary measure, the corresponding cards in Unit 3 have been scheduled for replacement.

UFSAR Section 15.2.2.5 and 15.10.2.2.5 evaluate the Loss of Normal Feedwater Flow with the plant at full power. The UFSAR analysis shows that all of the event acceptance criteria (DNBR, offsite doses, peak linear heat rate, peak RCS pressure, and peak secondary pressure) are met. Therefore, there was little to no safety significance to this event.

Reactor Vendor: Combustion Engineering

Description of the Event:

On November 2, 2002 at 0316 PST (event date), with Unit 2 reactor at 100% power, the Reactor Protection System (RPS) {EIIS Code JC} actuated causing a Unit 2 reactor trip. A main Feedwater (FW) controller failed {EIIS Code JB}; the FW regulating valve (2FV1111) {EIIS Component Code FCV} began to close; and the water level in steam generator 89 decreased to the low-level trip set point.

On November 2, 2002, at 0538 PST, Southern California Edison (SCE) made a 4 hour telephone notification to the NRC Operations Center (Log No. 39340) in accordance with 10 CFR 50.72(b)(2)(iv)(B) and 10 CFR 50.72(b)(3)(iv)(A). SCE is providing this follow-up report in accordance with 10 CFR 50.73(a)(2)(iv)(A).

Cause of the Event:

SCE's cause evaluation is ongoing. However, preliminary investigations indicate that the 2FC1111 main FW controller card (serial number 3252836) had a shorted low limit operational amplifier (Motorola, MLM301AG, date code 7432) (Cause Code: X). This may be an age-related failure. This LER will be supplemented if this conclusion changes significantly.

Corrective Actions:

SCE replaced both Unit 2 main FW controller cards (2FC1111 and 2FC1121) with new cards (even though 2FC1121 tested satisfactorily). As a precautionary measure, the corresponding cards in Unit 3 have been scheduled for replacement.

Safety Significance:

UFSAR Section 15.2.2.5 and 15.10.2.2.5 evaluate the Loss of Normal Feedwater Flow with the plant at full power. The UFSAR analysis shows that all of the event acceptance criteria (DNBR, offsite doses, peak linear heat rate, peak RCS pressure, and peak secondary pressure) are met. Therefore, there was little to no safety significance to this event.

An assessment of the conditional core damage probability (CCDP) and the conditional large early release probability (CLERP) for the November 2, 2002 event, determined that the Unit 2 CCDP and CLERP were 5.0E-6 and 2.2E-7, respectively. The assessment was based on the reported actual component unavailability and system alignments at the time of the event.

Additional Information:

On November 21, 1999, the Unit 3 main feedwater controller card 3FC1121 failed due to a manufacturing defect (pinhole oxide defect) in an operational amplifier (Fairchild, date code 7825). That controller card had been in service for many years and when it failed, it failed at the location of the manufacturing defect. Corrective actions for the November 21, 1999 event focused on cards with Fairchild operational amplifiers.